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BIOGRAPHIES OF SELECTED SOVIET SCIENTISTS

ANALYSIS AND PREDICTION OF RUSSIAN SCIENCE

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BIOGRAPHIES OF SELECTED SOVIET SCIENTISTS

Following are translations of the biographies of the Soviet scientists listed below. Source information is contained with the respective biographies.⁷

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PAVEL MITROFANOVICH LUK'YANOV

Translated from Zhurnal vsesoyuznogo khimicheskogo obshchestva im. D. I. Mendeleyeva (Journal of the All-Union Chemical Society imeni D. I. Mendeleyev), Vol V, No 1, 1960, pages 92-93.

This year marks the seventieth anniversary and 45 years of scientific work of Chemical Engineer Pavel Mitrofanovich Luk'yanov. P. M. Luk'yanov has traveled a great labor road. Graduating with distinction from Chemistry Department of the Moscow Higher Technical School in 1914, P. M. Luk'yanov took a job in industry, initially as assistant director of the Kineshma works and then as technical director of one of the Moscow chemical works.

After the Great October Revolution P. M. Luk'yanov took an active part in the rehabilitation of the basic chemical industry. Since 1918 he has worked in VSNKh (Vysshiiy sovet narodnogo khozyaystva -- Supreme Council of the National Economy), in Khimosnova (Otdel osnovnoy khimicheskoy promyshlennosti (pri VSNKh) -- Department of Basic Chemical Industry under the VSNKh), in Glavkhimprom (Glavnaya upravleniya osnovnoy khimicheskoy promyshlennosti -- Main Administration of the Basic Chemical Industry), in the Association of Bondyg Chemical Works, in Severokhimtrest (Severnyy khimicheskiy trest -- Northern Chemical Trust), and in other establishments. He has been an expert and consultant in plants manufacturing acids, alkalis, salts, and electrochemical products.

P. M. Luk'yanov has spent many years in design and planning work, starting in chlorine plants after a foreign assignment, followed by tours of duty in soda and sulfuric acid works. From 1932 to 1937 he was chief engineer in Giprokhim (Gosudarstvennyy institut po proyektirovaniyu predpriyatiy osnovnoy khimicheskoy promyshlennosti -- State Institute for the Design and Planning of Basic Chemical Industry Enterprises); took part in commissions investigating the application of oxygen and bakelite in NKTP (Narodnyy komissariat tyazhel'noy promyshlennosti -- People's Commissariat for Heavy Industry); was an expert in the planning and design of the Sterlitamak Soda Works and of the Khibibnogorsk Combine, and of many other plants in the USSR; and he was a member of the Chemistry Section of the Council on Scientific and Technical Inspection, USSR State Planning Commission. P. M. Luk'yanov took part in the acceptance and starting up of a number of chemical plants as the chairman and member of the acceptance and starting up commissions.

P. M. Luk'yanov combined practical work with teaching activities. In November 1917, he started as an assistant in the Department of Mineral Technology of MVTU (Moskovskoye vyssheye tekhnicheskoy uchilishche -- Moscow Higher Technical School). In 1924, P. M. Luk'yanov was made a professor in the same department. In addition to teaching at the MVTU he also lectured on chemical technology in the Institute of National Economy imeni Plekhanov. In 1932, he was made a professor and head of the Department of Basic Chemical Industry in the Training Combine imeni Lenin. From 1933 to the present he has been head of, first, the Department of

Electrochemical Products Technology and now Department of General Chemical Technology of the MKhTI (Moskovskiy khimikotekhnologicheskiy institut -- Moscow Institute of Chemical Technology) imeni Mendeleyev. In 1938, P. M. Luk'yanov was awarded the degree of Doctor of Chemical Sciences.

As a noted expert and a gifted lecturer, P. M. Luk'yanov has been called on to lecture on chemical technology in various institutes: MIKhM (Moskovskiy institut khimicheskogo mashinostroyeniya -- Moscow Institute of Chemical Machinery) and the Moscow State University. Meanwhile, he was a member of VAK (Vissaya attestatsionnaya komissiya -- Higher Certification Commission) of the Scientific Council on Professional Technical Training of the Ministry of Labor Reserves, etc.

During his many years of teaching work P. M. Luk'yanov has trained a large number of chemical engineers and candidates and doctors of chemical sciences for the chemical industry, who are now successfully working in the many plants and institutes of our country.

P. M. Luk'yanov has authored basic works on chemical technology. He has published over 100 works (including 19 books). In 1924, he published Kurs khimicheskoy tekhnologii (Course in Chemical Technology -- at the time the sole textbook for students in chemical institutions. Part I of the Course has gone through five editions, part II has had two editions, and part III has also been published. The total number of copies of the Course has reached almost 100,000.

P. M. Luk'yanov has been engaged lately in the study of the history of the chemical industry, working chiefly with archival documents. He has already published four volumes of Istoriya khimicheskikh promyslov i khimicheskoy promyshlennosti v Rossii (History of the Chemical Trade and Chemical Industry in Russia), with volume five being ready for the press. For this major scientific work P. M. Luk'yanov was awarded the Stalin Prize. For Istoriya proizvodstva azotnoy kisloty v Rossii (History of Nitric Acid Manufacture in Russia) and Kraski drevney Rusi (Dyes of Ancient Russia) he won prizes of the All-Union Chemical Society imeni D. I. Mendeleyev. In 1959 he published Kratkaya istoriya khimicheskoy promyshlennosti SSSR (Brief History of USSR Chemical Industry). Since 1947, P. M. Luk'yanov has been with the Institute of the History of Natural Science and Engineering, USSR Academy of Sciences, as Senior Scientific Worker.

It should be noted that P. M. Luk'yanov has also been very active in public work. He is bureau chairman of the Inorganic Compounds Technology Section, Central Board of the All-Union Chemical Society imeni D. I. Mendeleyev. He is active in congresses, conferences and meetings devoted to chemical-technology problems.

In appreciation of the services performed by P. M. Luk'yanov in the manufacturing, scientific and teaching fields, as well as for active public work, the Supreme Soviet RSFSR conferred on him in 1958 the honorary title of Honored Worker of Science and Engineering.

We wish Pavel Mitrofanovich many, many more years of life and fruitful work for the good of our Motherland.

Staff Members, Chair of General Chemical Technology, Moscow Institute of Chemical Technology imeni D. I. Mendeleyev

IVAN YAKOVLEVICH RAZDOL'SKIY

Translated from Zhurnal nevropatologii i psichiatrii imeni S. S. Korsakova (Journal of Neuropathology and Psychiatry imeni S. S. Korsakov), Vol 60, No 8, 1960, pages 1080-1081.

On 24 June 1960, the medical community marked the seventieth birthday and 41 years of medical, scientific, teaching and public work of Honored Worker of Science, Alternate Member of the USSR Academy of Medical Sciences, Professor Ivan Yakovlevich Razdol'skiy.

After finishing the Military Medical Assistants School in 1908 in Yekaterinodar (now Krasnodar) I. Ya. Razdol'skiy worked in the local hospital as an assistant (fel'dsher), meanwhile getting ready for admission to the classical gymnasium.

In 1914, he enrolled in the Military Medical Academy, being retained in its Department of Nervous Diseases upon graduation.

I. Ya. Razdol'skiy embarked upon scientific research work already in his student years, under the guidance of M. I. Astvatsatuров and B. S. Doynnikov. Two of his published student pieces were awarded prizes: one -- Prize imeni Motorin; the other -- a gold medal.

I. Ya. Razdol'skiy has made valuable contribution to domestic neurology. His pen is responsible for over 160 scientific works, including five monographs. These works deal with experimental histology and experimental physiology, the evolution of the nervous system, the clinical picture in nervous diseases, traumas of the nervous system.

Ivan Yakovlevich conducted his experimental histological works using a new method which he himself had worked out -- that of staining the degenerated nerve terminals and their synapses.

Of particular interest is the monograph Evolyutsiya nervnoy sistemy (Evolution of the Nervous System) (1926) in which the explanation is for the first time furnished of the cephalization processes and, especially, of cerebralization of the nervous system from the viewpoint of the mechanisms established by I. P. Pavlov.

Ivan Yakovlevich has put his greatest effort into the problem of tumors of the central nervous system. The experience gained in the study of neoplasms is reflected in four monographs: Opukholi IV zheludochka (Tumors of the IV Stomach) (1940), Opukholi golornoy mozga (Brain Tumors) (1954), Klinika opukholey golornoy mozga (Clinical Picture in Brain Tumors) (1957), and Opukholi spinnogo mozga i pozvonochnika (Tumors of the Spinal Cord and Spine) (1957). These monographs are based on the analysis of literary data as well as on a large number of personal observations.

The general analysis of the pathogenesis of tumor symptoms is particularly valuable. I. Ya. Razdol'skiy stresses the fact that an important part in the origin of functional disturbances in brain tumors is played not only by the direct effects of the tumor on the medullary substance and on the blood and lymph circulation, but also by the complex neurodynamic disturbances which implicate several other sections of the brain. I. Ya. Razdol'skiy interprets these symptoms from the standpoint of the Pavlovian school of physiology. He has described: symptoms of femoral withering in

tumors of the frontal lobe; the dorsal-bridge syndrome in tumors of pons Varolii; the temporal-supranasal syndrome in tumors of the pituitary; the sagging wrist symptoms in tumors of the cerebellum; etc.

In a series of reports and articles I. Ya. Razdol'skiy had taken to task some foreign authors (Wade, McKenzie, Grinker, Nielsen, and others) as well as our own authors, for their anti-Pavlovian views of the optic node as the higher apparatus of pain perception. He has shown on clinical examples that Pavlov's teaching about the cortex being the higher synthesist-analyzer is the only teaching that fully explains the phenomena observed in clinical practice.

For many years Ivan Yakovlevich was deputy chairman and then chairman of the Neurology Section of Leningrad Society of Neuropathologists and Psychiatrists. He is a member of boards of the following All-Union societies: Neurosurgeons, Psychiatrists and Neuropathologists; he is a member of the editorial board for the publication of a ten-volume handbook on neuropathology, and the title editor of volume five of this edition ("Tumor and Trauma of the Nervous System"); he is a member of the editorial board of the journal Voprosy neyrokhirurgii (Problems of Neurosurgery) and of Zhurnal nevropatologii i psikiatrii imeni S. S. Korsakova (Journal of Neuropathology and Psychiatry imeni S. S. Korsakov); he is an honorary member of the All-Union Society of Neurosurgeons.

I. Ya. Razdol'skiy is the recipient of the Order of Lenin, Order of the Red Star, and medals.

In 1946, Ivan Yakovlevich received the honorary title of Honored Worker of Science and was elected Alternate Member of the USSR Academy of Medical Sciences.

In warmly congratulating the illustrious representative of Soviet neuropathology on the occasion of this glorious jubilee, we wish Ivan Yakovlevich health, new successes in work for the good of progressive Soviet medical science.

YELIZAVETA PIGASIYEVNA KONONOVA

Translated from Zhurnal nevropatologii i psichiatrii imeni S. S. Korsakova (Journal of Neuropathology and Psychiatry imeni S. S. Korsakov), Vol 60, No 8, 1960, page 1081.

April 1960 marked the eightieth anniversary of Honored Worker of Science, head of the Architectonic Laboratory of the Brain Institute, USSR Academy of Medical Sciences, Professor, Doctor of Medical Sciences Yelizaveta Pigasiyevna Kononova.

After graduation from the Paris Medical Faculty in 1912, Ye. P. Kononova worked in Paris under the direction of Dejerine and Babinski. Here, also, she defended her dissertation and was awarded the degree of Doctor of Medical Sciences.

Returning to Moscow, Ye. P. Kononova passed the state examination with distinction and received the title of physician.

From 1913 to 1929, she was with the Neural Diseases Clinic of the First Moscow State University, initially as a hospital physician, and then as an assistant. In 1921, she successfully defended her dissertation for the degree of Doctor of Medical Sciences. Since 1932, Ye. P. Kononova has been with the Brain Institute where, from 1939, she has been head of the Architectonic Laboratory. During the Great Patriotic War she combined her work in the Brain Institute with duties in the neurosurgical hospital.

Ye. P. Kononova is noted as an expert anatomist of the central nervous system. In the course of many years of scientific and teaching work she has authored over 60 scientific works, including five monographs on the clinical picture and morphology of the central nervous system. Her pen is responsible for chapters dealing with the anatomy of the central nervous system in a number of handbooks, charts, textbooks, and in the *Bol'shaya meditsinskaya entsiklopediya* (Large Medical Encyclopedia).

A series of fundamental investigations conducted by Ye. P. Kononova on the cytoarchitectonics of human cerebral cortex stand out particularly prominently, especially those concerned with the most complex but least studied region -- the frontal. These works deal both with the structure of the frontal cortex region in a grown man and its variability, and with its development during the prenatal and postnatal ontogenesis. Ye. P. Kononova has established the extremely broad variability in architectonic structures of this phylogenetically new region.

The recently completed investigations into the frontal area in a number of primates are of important theoretical and practical value. The analysis of minute structural features of the frontal cortical area in man and various members of the primate order has revealed the characteristic differences and the maximal perfection of the frontal cortex formations in man.

The results of this work enable us to approach from new positions the evaluation of functional significance of the frontal region within the general system of cortical terminals and the analyzing nerves. Conclusions derived from this work are of important value to physiologists and clinicists.

Ye. P. Kononova is an excellent teacher. Many neuropathologists and morphologists-neurologists have been trained under her guidance.

Ye. P. Kononova does a great deal of consulting, rendering assistance to scientific workers in several institutes in Moscow and its periphery, as well as to practical workers in the Moscow clinics and hospitals.

For services rendered over the years and for irreproachable work Ye. P. Kononova was awarded the Order of Lenin and the title Honored Worker of Science.

Her great scientific, research, clinical, and pedagogic work will place Ye. P. Kononova in the ranks of outstanding neurologists-morphologists of our country.

We wish Yelizaveta Pigasiyevna health and more creative achievements.

LEV YAKOVLEVICH BRUSILOVSKIY

Translated from Zhurnal nevropatologii i psichiatrii imeni S. S. Korsakova (Journal of Neuropathology and Psychiatry imeni S. S. Korsakov), Vol 60, No 8, 1960, page 1082.

This year marks the seventieth anniversary and 45 years of scientific, teaching, and public work of neuropathologist, Doctor of Medical Sciences, Professor L. Ya. Brusilovskiy.

Lev Yakovlevich has been through a great school in neuropathology, having served as a hospital physician, assistant, and lecturer in the Neural Diseases Clinic of the First Moscow State University under the direction of G. I. Rossolimo. He has worked in the People's Commissariat of Public Health RSFSR, under the direct supervision of N. A. Semashko. He has authored over 100 scientific works on various problems of pathological histology, prophylaxis and clinical picture in nervous diseases, as well as on the residual work capacity of invalids.

For 35 years Lev Yakovlevich has been engaged in the compilation of medical encyclopedias as deputy chief editor of five medical encyclopedias. This work has earned the highest rating on the part of the medical community.

Possessed of inexhaustible energy, Lev Yakovlevich has been extremely useful to the societies of neuropathologists and psychiatrists in his capacity as a presidium member of various staffs and organizing committees for congresses and conferences.

We wish L. Ya. Brubilovskiy many more years of creative work for the good of Soviet medicine.

YEFIM VASIL'YEVICH MASLOV

/Translated from Zhurnal nevropatologii i psichiatrii imeni S. S. Korsakova (Journal of Neuropathology and Psychiatry imeni S. S. Korsakov), Vol. 60, No 8, 1960, pages 1082-1083.7

In January 1960, the L'vov medical community warmly marked the seventieth anniversary and 35 years of medical, scientific, teaching, and public work of head of the Psychiatry Department of L'vov Medical Institute, Honored Worker of Science, Doctor of Medical Sciences, Professor Yefim Vasil'yevich Maslov.

Following the successful graduation from the Medical Faculty in 1923, Yefim Vasil'yevich was retained in the Neural and Mental Diseases Clinic of Rostov-na-Donu University, headed at that time by A. I. Yushchenko.

In 1935, he was elected professor and head of the Psychiatry Department of Ashkhabad Medical Institute.

In 1943, Ye. V. Maslov was awarded the title Honored Worker of Science by the Presidium of the Supreme Soviet Turkmen SSR "For notable achievements in scientific research work and in the training of medical personnel."

In 1945, Yefim Vasil'yevich was admitted to membership in the All-Union Communist Party (Bolshevik).

At the end of 1945 he successfully competed for the position of Head of the Psychiatry Department of the L'vov Medical Institute, where he has worked to the present.

Since 1951, he has been a deputy to the L'vov City Soviet.

Along with his medical, teaching, and public activities Ye. V. Maslov does a great deal of scientific research work. He has authored over 150 scientific works, over half of which have been published, including four monographs. These works deal with various aspects of psychiatry and neuropathology, and treatment and prevention of mental diseases. Particularly notable in this context are the writings on regional pathology which throw light on neuro-mental diseases and the organization of psychoneurological assistance in Northern Caucasus, Northern Osetiya, Turkmen SSR, and in the western oblasts of the Ukrainian SSR.

A number of works deal with the problem of schizophrenia (dynamics of vegetative disturbances, pathogenesis, variation in the reactivity of the organism during treatment, clinical picture, prevention, etc.), the problems of narcomania (opiomania, cannabis, alcoholism), and with the neuropsychic disturbances in these conditions and the control measures.

Yefim Vasil'yevich is bursting with new plans, creative quests, and strivings. We wish him health, cheer, and further fruitful work for the good of our grand Motherland.

SANDZHAR DZHAFAROVICH ASFENDIYAROV

Translated from Vestnik Akademii nauk Kazakhskoy SSR (Herald of the Kazakh SSR Academy of Sciences), No 12, Alma-Ata, 1959, pages 101-102.⁷

In October 1959, the Kazakhstan community marked the seventieth anniversary of Kazakh scientist and government worker, Prof S. D. Asfendiyarov.

S. D. Asfendiyarov has left a valuable scientific legacy. His works: Proshloye Kazakhstana v istochnikakh i materialakh (Kazakhstan's Past in the Original Sources and Documents) (1935-1936, Istoriya Kazakhstana s drevneyshikh vremen (History of Kazakhstan From Ancient Times), chapter I of Natsional'no-osroboditel'noye vosstaniye 1916 goda v Kazakhstane (National Liberation Uprising in 1916 in Kazakhstan), and other writings have lost nothing of their value through the years.

This scientist, teacher, and gifted organizer has done much also for the progress of higher education in the Republic. His name is associated with the organization of the first center of scientific thought in Kazakhstan -- the Kazakh Branch of the USSR Academy of Sciences. He was the first head and professor of the Kazakh Pedagogic Institute imeni Abay.

Sandzhar Asfendiyarov has taught a whole cluster of scientists and teachers who are now working fruitfully in scientific establishments and pedagogic institutions of the Republic.

On 12 November 1959 there was held a joint session of Scientific Councils of the Institute of History, Archaeology and Ethnography of the Academy of Sciences Kazakh SSR and Kazakh Pedagogic Institute imeni Abay, honoring the 70th anniversary of Professor Asfendiyarov.

Kh. M. Adil'gerezeyev, docent in the Kazakh Pedagogic Institute, spoke on the life and work of the scientist, teacher, and public worker. Describing in detail the road traveled by S. D. Asfendiyarov (1889-1939), the speaker pointed out the valuable contribution made by the scientist to the writing of history of Kazakh SSR.

Asfendiyarov belongs to the circle of progressive intellectuals who actively fought to defend the interests of Soviet power from the very first days of its establishment.

In 1918-1919 he took part in routing the counterrevolution in Bukhara and the Transcaspian region. In 1919 S. D. Asfendiyarov was admitted into the Bolshevik Party ranks.

In the twenties he carried on Party and Soviet work, as first secretary of the Turkestan Communist Party Central Committee, as member of the Executive Bureau of the Central Committee, as a member of the Central Asiatic Bureau of the Central Committee of Russian Communist Party (Bolshevik), as people's commissar for public health and for agriculture of the Turkestan Soviet Republic. In 1925, he was elected member of the Presidium and Deputy Secretary of All-Union Central Executive Committee (Bolshevik). Since 1927 Asfendiyarov has been rector of the Institute for Eastern Studies of the Central Executive Committee USSR. He is also teaching in the Moscow State University.

Toward the end of the twenties the Party dispatched him to Kazakhstan, where a higher school and many other scientific establishments were then springing up. As People's Commissar for Public Health, as deputy president of the Kazakh Branch of the USSR Academy of Sciences, and as professor in the Kazakh Pedagogic Institute, Asfendiyarov studied the history of Islam, the national revolutionary movements in the East, and collected considerable material on the history of Kazakhstan.

In analyzing Asfendiyarov's fundamental works on the history of Kazakhstan, Kh. M. Adil'gereyev stated that the author had subjected the patrician-landlording and bourgeois-national views of Kazakhstan history to a well grounded criticism. In this area the scientist had in the main correctly studied the ancestral system, the feudal-patriarchal stage of development of the Kazakhs, as well as the period of annexation of Kazakhstan to Russia. Most valuable are his findings on the formation of three Zhuzes in Kazakhstan and on the ontogenesis of the Kazakh people.

Because of the inadequately studied history of Kazakhstan and of the negative influence exercised by the vulgarizing anti-historical concept of M. N. Pokrovskiy, the Kazakh author has permitted certain serious errors to creep into his writings. Specifically, the annexation of Kazakhstan to Russia has been evaluated in a somewhat prejudicial manner, the work of Kazakh teachers has been inaccurately characterized, etc. However, the basic theses of Asfendiyarov's writings are fully acceptable and scientifically well grounded. Therefore, in the name of the Scientific Council of Pedagogic Institute and in his own behalf, the speaker proposed that the basic writings of Asfendiyarov, which have already become a bibliographic rarity, be reissued.

The session also heard remembrances and individual messages from Academician A. Kh. Margulan, Academy of Sciences Kazakh SSR; Docent A. I. Kuznetsov; S. Ye. Tolybekov, Director of the Economics Institute, Academy of Sciences Kazakh SSR; Candidates of Historical Sciences Ye. Dil'mukhamedov and Kh. Khabiyev; and M. Baydil'dayev, Scientific Worker, Institute of Language and Literature. The speakers unanimously seconded the proposal to reissue S. D. Asfendiyarov's work.

Closing the session, A. N. Nusunbekov, Director, Institute of History, Archaeology and Ethnology, Academy of Sciences Kazakh SSR, presented the Kazakh Pedagogic Institute imeni Abay with a big portrait of Prof S. D. Asfendiyarov as a gift from the staff members.

R. Suleymenov

IVAN VLADIMIROVICH DOMRACHEV

Translated from Kazanskiy meditsinskiy shurnal (Kazan' Medical Journal), Vol XLI, No 1, 1960, pages 3-5.

October 26, 1959 marked the seventieth birthday and 46 years of medical, scientific, pedagogic, and public work of Honored Scientific Worker of the RSFSR, Doctor of Medical Sciences, Prof Ivan Vladimirovich Domrachev. After graduating with distinction from the Kazan' University Medical Faculty in 1913, Ivan Vladimirovich worked for a year as assistant prosecutor in Prof V. N. Tonkov's Chair of Normal Anatomy, and concurrently as an extern in the Chair of General Surgery headed at that time by Prof A. V. Vishnevskiy.

Ivan Vladimirovich's very first steps in the medical field revealed purposefulness and the correctly chosen course of combining theory with practice.

With the coming of World War I, Ivan Vladimirovich was mobilized into the army and designated a regimental doctor, becoming in a year's time head of the surgery department of the Kazan' Military District hospital; this circumstance enabled him to work in A. V. Vishnevskiy's clinic as a hospital surgeon.

The year 1917 found him in the ranks of the Red Army, first as a surgeon in a field hospital and then, toward the end of the Civil War, as chief doctor of an evacuation hospital.

In the 1921 demobilization Ivan Vladimirovich returned to Kazan', completed his hospital surgeon's training, and was appointed assistant in the hospital's surgical clinic, headed by A. V. Vishnevskiy. In 1926 Ivan defended his doctoral dissertation "Secretory Innervation of the Prostate," which he had completed in the Chair of Normal Physiology under the guidance of N. A. Mislavskiy, and was awarded the degree of Doctor of Medical Sciences. In 1933 he was named Docent and in 1936, Professor. Also in 1936, Ivan Vladimirovich was elected Professor in the Chair of General Surgery of the Kazan' Medical Institute. When the Pediatric Faculty was organized, he was elected Professor in the Department of Facultative and Hospital Surgery of this new faculty (on the base of City Clinical Hospital No 3) where he has been working to the present.

Thus the 46-year activity of Ivan Vladimirovich has run almost its entire course within the walls of the Kazan' University and the Medical Institute, while for 30 years in succession he has headed the surgery department of the City Hospital No 3 to which he has devoted much energy and labor and which, thanks to his efforts, has become one of the best Kazan' hospitals.

As one of the closest students of Academician A. V. Vishnevskiy, Ivan Vladimirovich has been very active in the development and scientific substantiation of infiltration anesthesia. His "Local Infiltration Anesthesia in Operational Treatment of Fibromas of the Cranium Base," "Operative Treatment of the Cancer of Large Intestines," and "Delayed Results of Operative Treatment of the Cancer of the Mammary Gland under Local Anesthesia," proved to be among the first works on the effectiveness of local

anesthesia; they have earned a universal recognition both in peacetime and in wartime. In his later writings: "Vishnevskiy's Novocain Anesthesia in Stomach Operations," "Eighteen Years of the Method of Vishnevskiy's Viscous Infiltrate," "Progress of the Science of Local Infiltration Anesthesia," and others, Ivan Vladimirovich has developed and delved deep into the problems of local anesthesia in conformity with the present state of knowledge. He is a perfect master of the local-anesthesia method and of almost all operations, from the simplest to the most complex. He has been working on local anesthesia, introducing improvements designed to shorten the anesthesia time and improve its aseptic nature.

In 1929, A. V. Vishnevskiy's clinic began investigations into the novocain block. Ivan Vladimirovich applied his abundant energy to the study of this problem. The early 1930's saw the publication of his works on the treatment of trophic ulcers in lower extremities, stomach and duodenum, as well as the treatment of various suppurative processes using the novocain block. It is common knowledge that this method of slight irritation of the nervous system has been widely recognized in the treatment of many inflammation and functional diseases. The method had proved itself also in wartime in gunshot wounds of the abdomen and chest, in gunshot fractures of the extremities, and in traumatic shock. It proved so effective, in fact, that during the Great Patriotic War it was made the compulsory medical practice for the mentioned wounds, starting from the regimental medical aid station.

Ivan Vladimirovich submitted a clinically, well-substantiated, report to the Sixth All-Ukrainian Congress of Surgeons entitled : "Novocain Block as a Medical and Diagnostic Method."

In recent years Ivan Vladimirovich has been successfully working on a new kind of novocain block -- blocking of stomach nerves and peripheral trunks of the sympathetic nerve -- for inflammation processes in abdominal cavity organs. This block has proved so effective that it is being widely applied in clinical practice; it is also being used as a preliminary step in major operations involving the abdominal cavity organs.

From the very first days of his scientific activity, Ivan Vladimirovich revealed a special interest (he is exhibiting it even now) in stomach and duodenum ulcers. Possessing a vast store of experience in stomach surgery, encompassing about 3,000 personally performed stomach operations, he is systematically generalizing this experience in his numerous writings and in those of his associates. It should be noted that Ivan Vladimirovich has always held the view that stomach and duodenal ulcers are not a local disease but rather a condition involving the entire organism; he has always supported the nervous theory of its pathogenesis.

He has proposed for intestinal anastomoses his own method of suturing end to end, thus providing firmness, a hermetic seal, and conformity of the sutured intestinal terminals. He has also proposed an original "Dry-method" of catgut preparation that is technically simple and provides sterility, stability, and an extended preservation period.

Having served as a consultant to a number of evacuation hospitals in Kazan' during the Great Patriotic War, Ivan Vladimirovich has described the

experiences he gained in treating the wounded in his writings on infected wounds and on gunshot osteomyelitis, speaking out for the need for secondary radical treatment of wounds and infected fractures by means of the novocain block and balsam oil drainage of wounds.

In 1950, Ivan Vladimirovich was one of the first surgeons in the Soviet Union to come forth with a series of works on the significance of Pavlovian physiology in surgery, correctly stressing the part played in it by the Kazan' school which has produced such as A. D. Speranskiy, K. M. Bykov, R. I. Lavrent'yev, A. V. Vishnevskiy, and others.

Ivan Vladimirovich's pen is responsible for over 30 scientific works dealing chiefly with clinical surgery. These scientific problems have found their reflection also in the writings of his students, both in journal publications and in dissertations.

A brilliant surgeon and diagnostician, a considerate and sympathetic physician, Ivan Vladimirovich is deservedly enjoying universal love and respect.

In greeting Ivan Vladimirovich on this memorable anniversary, his students and associates wish him good health, long life, and fruitful work for the good of the Motherland.

Docent V. I. Mikhaylov (Kazan'),
by Commission of Staff Members

VSEVOLOD VLADIMIROVICH IZOSIMOV

/Translated from Kazanskii meditsinskii zhurnal (Kazan' Medical Journal), Vol 41, No 1, 1960, pages 5-7./

November 9, 1959 marked the sixtieth birthday and 40 years of teaching, scientific, and public work of head of the Chair of General Biology at the Kazan' Medical Institute, Doctor of Biological Sciences, Prof Vsevolod Vladimirovich Izosimov.

Still as a student in the Natural Science Section, Physico-Mathematics Faculty of Kazan' University, V. V. Izosimov began his scientific and teaching work in the Chair of Invertebrate Zoology then headed by Prof N. A. Livanov, in which the practice of lecturing by medical students was allowed. When the Medical Faculty was made an independent Medical Institute, V. V. Izosimov started working in it from the first day of its inception; he has been working there ever since. Even during his work at the university under the supervision of Prof N. A. Livanov, V. V. Izosimov had a number of his works published in domestic and foreign literature on the subject of the morphology and systematics of fauna in the environs of Kazan'.

Meanwhile, V. V. Izosimov took part in several scientific expeditions to the White, Barents, and Black seas. He also worked in the Murmansk, Novorossiysk, Saratov, and Baykal biological stations, affording himself an opportunity to conduct a series of original hydrobiological investigations. These researches contributed to his fame in this area of biology.

In 1931, V. V. Izosimov was elected head of the Chair of General Biology of the Kazan' Medical Institute where, under his direct leadership, a Chair and a modern laboratory were established. In 1933 he was confirmed in the title of Professor.

Vsevolod Vladimirovich has been active in directing the education of students and in training of physicians, initially as dean and subsequently as deputy director for academic affairs of the Stomatology and Medical Institutes.

V. V. Izosimov devotes particular attention to the problems of reorganization and improvement of training of physicians in the light of decrees passed by the Party and Government affecting the higher school. He enjoys the great love and respect of his students. His lectures are always erudite and, at the same time, interesting and within intellectual reach of each student. For several years now V. V. Izosimov has been lecturing on biology and parasitology for physicians in the Kazan' GIDUV (Gosudarstvennyy institut dlya spetsializatsii i usovershenstvovaniya vrachey -- (State Institute for Specialization and Advanced Training of Physicians).

During his many years of scientific-pedagogic work, V. V. Izosimov has trained many physicians who are now working in various medical-prophylactic establishments of the country. Fourteen candidacy dissertations have been completed under his supervision. His services in the training of national cadres deserve particular mention.

The scientific research work of the staff headed by Prof Izosimov is not limited to the walls of the Biology Chair, but extends to many other scientific research and practical establishments whose activities adjoin biology.

Thus, on the basis of considerable material V. V. Izosimov has written and submitted to press a monograph entitled O proiskhozhdenii fauny lyumbrikulid Baykala (The Origin of Lumbricoid Fauna of Baykal). This monograph gives the ecological characteristics, occurrence, systematics, origin, and description of new species of the Baykal oligochaetous worms which serve, in particular, as valuable nutrition resources of the country's fish wealth.

V. V. Izosimov has organized and, at the request of the Pharmacology Institute, conducted a biological analysis of insecticides having major practical significance.

For several years associates in the chair, jointly with the Institute of Lake and River Fisheries, have been investigating the possibility of increasing the biological productivity of reservoirs. V. V. Izosimov has directed a study of plankton in new water reservoirs along the Volga and Kama rivers, which is of theoretical as well as practical interest for the prospects of fish culture.

The work conducted by the staff headed by V. V. Izosimov on the occurrence of helminthiases in children nurseries in Kazan' deserves a special mention. The investigations included also the environment: water, soil, vegetables, living quarters, items of daily use, as they pertain to the worm ova infestation. On the basis of data thus obtained the periods and methods of deworming were defined and, jointly with the public health organs, a complex of medico-preventive measures for individual children establishments was worked out.

The investigation conducted by V. V. Izosimov on opisthorchiasis, embodying the material on the biology and epidemiology of this parasite in Tatarskaya ASSR, is of major import.

The sources and methods of obtaining new antibiotics are being worked out under the direction of Prof V. V. Izosimov. As a result of several years of work the Chair produced a new antibiotic called poaen, from the *Fusarium poae* cultures. Tests of the biological properties of poaen conducted on animals have revealed its valuable antiblastic properties; this is of major biological and oncological interest.

Prof V. V. Izosimov has always been not only a scientist and teacher but an active public worker as well.

He was a member of the Kazan' City Soviet, 15th Convocation, and a deputy to the City Soviet; he has conducted seminars for the Institute associates on the subject of philosophy; he has been an active member of the Society for Dissemination of Political and Scientific Knowledge.

Prof V. V. Izosimov is a member of the Communist Party of the Soviet Union. The Government has highly rated the services rendered by V. V. Izosimov, awarding him the Order of Lenin and the medal "For Valorous Work in the Great Patriotic War."

The staff of the Medical Institute, its many students and associates greet the jubilarian and wish him health, many more years of life, and further successes for the progress of Soviet Science.

Lecturer S. G. Fayaullin, (Kazan'), by Commission
of Students and Associates

A. A. SKOCHINSKIY

Translated from Vestnik Akademii nauk SSSR (Herald of the USSR Academy of Sciences), No 12, 1959, pages 88-89. 7

A gala session of the Scientific Council of the Institute of Mining, USSR Academy of Sciences, was held on 2 October in the Hall of Scientists. The meeting was dedicated to the eighty-fifth anniversary and 60 years of scientific, teaching, and engineering work of Academician A. A. Skochinskiy.

In introductory remarks, N. V. Mel'nikov, Candidate Member of the USSR Academy of Sciences, described the jubilarian as an eminent scientist, a noted expert in mine aerology and contiguous disciplines concerned with mining safety.

The basic theoretical theses of modern mining aerodynamics were formulated by A. A. Skochinskiy in 1904. Later researches enabled him to develop the theory of air and gas circulation in basic mining works, which has served as the foundation for subsequent investigations into this problem.

As a result of recent investigations conducted under the direction of A. A. Skochinskiy into the effect of ventilation on the dust condition in mines, a theory of dust-controlling aerodynamic state for metal mines was formulated for the first time in USSR.

A. A. Skochinskiy has been deeply involved in mine gasdynamics. It was his works that permitted the determination of the methane-holding capacity of coal. This has made it possible to rate the methane content of typical coal in USSR and to work out the computing formulae and nomograms for determination of the gas content of coal beds. The scientist also initiated investigations to determine the feasibility of degassing coal beds during mining operations.

The jubilarian is responsible for over 100 published works. They include voluminous monographs: Rudnichnyy vozdukh i osnovnoy zakon yego divizheniya po vyrabotkam (Firedamp and the Basic Law Governing Its Motion During Mining), Rudnichnaya atmosfera (The Mine Atmosphere), and Rudnichnyye pozhary (Mine Fires). In 1949, A. A. Skochinskiy was awarded the title Laureate of the Stalin Prize for developing and implanting devices for control of the mine atmosphere. The textbook Rudnichnaya ventilyatsiya (Mine Ventilation), which he co-authored with Prof V. B. Komarov in 1951, was awarded the Stalin Prize.

During the years of his teaching work as a professor in the Leningrad and Moscow Mining Institutes, A. A. Skochinskiy has taught thousands of skilled mining engineers and trained innumerable squads of scientists who are now successfully working in various branches of the mining industry.

After the election to the USSR Academy of Sciences as a regular member in 1935, A. A. Skochinskiy headed the Mining Section Group of the Department of Technical Sciences. He has been the permanent director of the Institute of Mining from the first days of its organization.

During the Great Patriotic War, A. A. Skochinskiy did a great deal of work in mobilizing the resources of the Urals, Western Siberia, and Kazakhstan for defense. In 1943, on orders of the Presidium, he set about

to organize the West Siberian Branch of the Academy. From 1944 to 1954, he was chairman of the Presidium of this branch, which has grown into a big joint scientific research institution of Siberia.

The varied activity of A. A. Skochinskiy is highly valued in our country. He has been awarded the title of Hero of Socialist Labor, five Orders of Lenin, two Orders of Red Labor Banner, medals of the Soviet Union, as well as the honorary badge "Miner's Glory, First Degree."

At this gala session, A. A. Skochinskiy delivered a report on "Control of Dust as an Occupational Hazard in the Mining Industry of Soviet Union." Citing the scientific researches which have been carried out with this problem in view, A. A. Skochinskiy pointed out that, side by side with further improvement, development and implantation of the ways and means for removing dust from the mine atmosphere, it is imperative to seek new and better means of the dust control. This is extremely important for the future of deep mines because, due to the prevailing high temperatures in these mines, the use of large quantities of water in dust control, as now is the practice, is extremely objectionable from the viewpoint of sanitary-hygienic considerations.

In searching for new ways, use should be made of the achievements of modern physics and physical chemistry -- of heat and high-frequency drilling, electrolydraulic effect, electrofilters, acoustic dust precipitants, and condensation devices.

A. A. Skochinskiy elucidated in his report the diverse scientific investigations and important practical results obtained in the control of silicosis and pneumoconioses in the mines of Soviet Union. Taking part in this vast coordinated undertaking were more than seventy academic and professional institutes under the direction of the Interdepartmental Silicosis Control Commission whose president from its inception has been A. A. Skochinskiy.

Numerous greetings to the jubilarian were read at the session -- from the Presidium of USSR Academy of Sciences and its branches, from the Academies of Sciences of the Union Republics, academic and departmental scientific research institutes, higher educational institutions, and from mining-industry establishments.

A. A. Skochinskiy replied to the greetings by warmly thanking all those who had taken note of his anniversary, and expressed the confidence that the selfless work of scientists and workers will bring about a new boom in mining science and practice.

YEVSEY MARKOVICH GELLER

(Obituary)

Translated from Geologiya nefti i gaza (Oil and Gas Geology),
No. 12, 1959, page ?.

On 22 September 1959, at the age of 41, death came suddenly to the head of Bituminology Laboratory, Lower Volga Branch, All-Union Petroleum Scientific Research Institute for Geological Survey (VNIGNI -- vsesoyuznyy nauchno-issledovatel'skiy geologo-razvedochnyy neftyanoy institut), Laureate of the Prize imeni Academician Gubkin, Candidate of Geological-Mineralogical Sciences, member of the Communist Party of the Soviet Union, Yevsey Markovich Geller.

Ye. M. Geller was born on 23 September 1918 in Yaroslavl'. In 1941, he graduated with distinction from the Moscow Petroleum Institute imeni Academician I. M. Gubkin.

Ye. M. Geller started working in 1938 as a collector in the Institute of Fuel Minerals of the USSR Academy of Sciences, followed by a tour of duty in "Neftegazos"zemka" (Vsesoyuznaya spetsializirovannaya kontora po neftegazovoy s"zemke" -- (All-Union Specialized Office for Oil and Gas Survey), and in NIIGGR (Nauchno-issledovatel'skiy institut geofizicheskikh i geokhimicheskikh metodov razvedki -- Scientific Research Institute of Geophysical and Geochemical Prospecting Methods) and VNIGNI. He had worked in various rayons of the Urals-Volga region, implanting his exceptional talent in the theoretical substantiation, progress, and implementation of geo-chemical methods of prospecting and surveying of oil and gas deposits. Yevsey Markovich is known to a broad circle of geologists and petroleum engineers as one of the founders of these methods.

In the nascent state of the oil and gas industry in the Lower Volga region Ye. M. Geller was in the vanguard of prospectors and surveyors.

A manifoldly educated geologist, a keen explorer, and a man of tremendous creative energy, Ye. M. Geller was noted not so much for his published scientific writings as for his active participation in daily research work whose ideas shone brilliantly at meetings of scientists and production workers.

Ye. M. Geller's pen was responsible for over 60 scientific works, including 15 which have been published or made ready for the press. He was the author of several inventions and streamlining proposals. He had received several prizes for discovering oil and gas deposits.

In the last years of his life Ye. M. Geller put much effort into the development of a method of microgasometry -- a very delicate analysis of gas contained in rocks and in drill holes of various designations.

This method has opened up new possibilities for an objective determination of the prospects of gas and oil bearing capacity of individual areas and layers.

Yevsey Markovich died in the bloom of his creative power. He carried

on an active work until the last minutes of his life, yielding all his bubbling energy and vigor to the beloved work.

In Ye. M. Geller we have lost a considerate and responsive comrade, a man of great personal charm, an indefatigable worker, and an active propagandist of new ideas in the prospecting and surveying business.

The bright memory of Yevsey Markovich Geller will always remain in the hearts of those who knew him intimately.

A Group of Comrades

Wolff et al. (1997) have shown that the mean shear modulus of the crustal blocks is about 10 GPa, which is close to the yield modulus of the crustal blocks.

¹ See also the discussion of the effects of the 1993 constitutional changes on the autonomy of the provinces in the following section.

the following year, he became a member of the "Society of Friends" at New Haven.

“我所看到的，就是你所看到的，就是我所看到的……”

在於此，故其後人之學，多以爲子思之傳。蓋子思之學，實出於孟子，而後人不知，故以爲子思之傳。

20. *Amphibolite* (*metamorphic*) *metamorphic* *metamorphic* *metamorphic* *metamorphic* *metamorphic*

and the author's name, and the date of publication, and the publisher's name.

在這段時間內，我會繼續研究和學習有關的知識，並努力將其應用到我的工作當中。我會不斷地尋找機會，發揮自己的才能，為公司貢獻自己的力量。

其後有子曰平陽侯，後又有子曰漢安侯。

卷之三十一

and the following will be established on January 1, 1966.

After all the work, the last thing I wanted to do was go swimming.

As we're going back now, does anyone have any good recommendations for dinner?

其後又復有大風雨，水浸沒，人畜皆死。故其後常有大風雨，水浸沒，人畜皆死。

the author's name, and the date of publication. The author's name is often omitted, as in "A. S. Agassiz, 'The Fishes of the Atlantic Ocean,' 1854."

19. अनुप्रयोग विद्या के लिए विभिन्न विधियाँ उपलब्ध हैं। इनमें से कौन सी विधि आपके लिए उपयोगी है?

10.000 m² of land, which is the equivalent of 1000 ha.

NIKOLAY VLADIMIROVICH CHERNOV

Translated from Izvestiya vysshikh uchebnykh zavedeniy.
Tekhnologiya lekoy promyshlennosti (News of Higher Educational
Institutions. Technology of Light Industry), No 6, 1959, pages
126-128.⁷

Professor, Doctor of Technical Sciences Nikolay Vladimirovich Chernov
was seventy years old on 19 December 1959.

Nikolay Vladimirovich Chernov is one of the oldest scientific and
engineering-technical workers of Soviet tanning industry. He is rightly
considered to be one of the top authorities in the theory and practice of
leather manufacture.

N. V. Chernov began his engineering work in 1913 as a chemist in
Zhemochkin's Tannery. From 1918 to 1922, he occupied supervisory posts
in the Main Committee of Leather Industry (Glavkozh -- Glavnyy komitet po
delam kozhevennoy promyshlennosti), in the Central Administration of
Leather Industry (Tsentropravkozh -- Tsentral'noye Upravleniye kozhevennoy
promyshlennosti), and in Glavupravkozh (Glavnoye Upravleniye kozhevennoy
promyshlennosti -- Main Administration of Leather Industry). In March 1922,
N. V. Chernov transferred to the "Truzhenik" Tannery (now called the Tan-
nery imeni Tel'man) as assistant technical director. During his tour of
duty in this tannery the efforts of N. V. Chernov were directed to the con-
tinuous increase in leather production and to the installation of new tools
and equipment. Drive belt shops were set up under his direction. From
1924 to 1926, N. V. Chernov held a second job, as technical director in
the "Postavshchik" Tannery (now the Moscow Tannery) where the planning for
and start of the plant's expansion were begun under his direction.

As an advocate of progressive speed-up methods in leather manu-
facture, N. V. Chernov has been following this technical line in the
leather industry during his many years of work.

N. V. Chernov has participated in putting into practice such import-
ant measures as the transition to the liquor-drum and later to the purely
drum tanning of tough hides, the use of synthetic tanning agents, and many
other measures.

In December 1929, N. V. Chernov was appointed dean of the newly
organized Leather Faculty in the Moscow Chemical Technological Institute
imeni D. I. Mendeleyev. Since then his days have been devoted to the affairs
of the Chair of Leather Technology. In April 1930 the Faculty of Leather
Technology was reorganized into the Leather Institute, with N. V. Chernov
as its first director. In February 1931 N. V. Chernov was transferred to
the post of deputy director of the Central Scientific Research Institute
of the Leather Footwear Industry, a post he held until 1936. Very import-
ant problems were defined with his help, the solution of which contributed
to the reconstruction of the leather industry and to the founding of the
tanning extracts and leather substitutes industry.

In 1937, N. V. Chernov joined the Communist Party of the Soviet Union.
N. V. Chernov's scientific-teaching work has been going on for 30

years now. He was one of the first organizers of the Moscow Technological Institute of Light Industry, where he is now engaged in the teaching, scientific, and methodical work, being the permanent head of the Chair of Leather and Fur Technology. From 1937 to 1944, he was head of the Chair of Industrial Goods Management Science of the Institute of National Economy imeni G. V. Plekhanov. From 1943 to 1948, N. V. Chernov held the post of deputy director for scientific and academic work in the Moscow Technological Institute of Light Industry, and the post of deputy director for scientific work from 1948 to 1952. The academic plans and a series of program courses were worked out under his direction. Jointly with his associates in the Chair of Leather and Fur Technology, N. V. Chernov wrote several textbooks, including Tekhnologiya kozhi (Leather Technology), Tekhnologiya mekha (Fur Technology), Khimiya Kozhevennogo i mekhovogo proizvodstva (The Chemistry of Leather and Fur Manufacture), and Tekhnologiya kozhi i mekha (Leather and Fur Technology); these books are currently being used by the students in these disciplines. Hundreds of engineering technologists in leather, fur, and tanning extracts manufacture have been trained under N. V. Chernov's supervision; many of these are now the leading workers in these branches of light industry.

Prof. N. V. Chernov's scientific work has been varied. For almost fifty years his scientific interests have been linked to leather technology; they touch on the economics and quality of leather, chemistry of leather manufacture, and albumin chemistry.

N. V. Chernov generalized a major portion of his works on leather quality in his doctoral dissertation, which was published in monograph form as Ucheniye o kachestve kozhi (A Study of Leather Quality). This monograph reveals the physical meaning of various indices of leather properties and establishes a method of rating leather quality. N. V. Chernov has developed a theory of leather-structure orientation during deformation, which is now widely applied by many researchers in the field of leather-goods science. In works devoted to the chemistry of leather manufacture and the chemistry of albumins, N. V. Chernov has made new additions to modern ideas on the structure and properties of collagen; he has examined its hydration and swelling, the changes produced by soaking and liming, as well as the gelatin and glue formation. In his theory of vegetative tanning N. V. Chernov was the first to demonstrate experimentally the compression of skin components due to prolonged tanning, and to express these mechanisms in mathematical formulae. Several of his works deal with the use of chromium and iron compounds. Many of these scientific works have been crowned with success, thanks to N. V. Chernov's participation in them. More than a few of his ideas have found their way into the works of many postgraduate students of the Moscow Technological Institute of Light Industry, who are now candidates of sciences, successfully working in the teaching and scientific fields and in the industry.

N. V. Chernov is known as an active public worker who has for decades applied his knowledge and considerable experience to the development of creative work habits in specialists, to the implementation of progressive engineering practices, and to the advancement of technical progress in the leather industry.

From 1925 to 1930, N. V. Chernov was a member of Guboblotdel ITS (Guberniskiy-oblastnoy otdel Inzhenerno-tehnicheskoy sektsiy -- Guberniya-Oblast Department of the Engineering and Technical Sector) of the tanners' union. From 1932 to 1934, and from 1936 to 1955, he was Chairman of, first, the Organization Bureau and then of the Board, of the Scientific Technical Society of the Leather, Footwear and Fur Industry. From 1955 to 1959, he was deputy chairman and then chairman of the Scientific Technical Society of Light Industry. Since 1959 he has been a member of the Plenum of the Central and Moskorskaya Oblast Boards and a member of the Presidium of the Central Board of the Society. In 1959, the All-Union Congress of Society Members conferred upon him the title of honorary member of NITOlegprom (Nauchnoye inzhenerno-tehnicheskoy obshchestvo legkoy promyshlennosti -- Scientific, Engineering and Technical Society of Light Industry).

N. V. Chernov has been very instrumental in amalgamating the most skilled workers of science and engineering in several cities, and in organizing large numbers of active specialists-public workers. Under the leadership of N. V. Chernov the All-Union Scientific, Engineering and Technical Society of Light Industry has solved a number of problems having national economic and professional significance, producing thus valuable results.

N. V. Chernov was twice elected deputy to the Moscow City Soviet: 1931-1934 and 1940-1947.

The Government has highly rated the services rendered by N. V. Chernov, awarding him two Orders of the Red Labor Banner, two orders of the "Badge of Honor," and two medals.

The scientific, pedagogic, engineering, and technical community of the leather industry cordially marks the seventieth anniversary of the noted scientist-communist and prominent public worker, Prof N. V. Chernov, and extends to highly esteemed Nikolay Vladimirovich wishes for long life, health, and creative achievements for the welfare of our grand Motherland.

科学院通讯社稿 ANTON VLADIMIROVICH DUMANSKIY

Translated from *Kolloidnyy zhurnal* (Colloid Journal), Vol. 22,
No. 3, 1960, pages 265-271.

The scientific community of our country marks the eightieth anniversary and almost sixty years of scientific and teaching work of the Regular Member of Ukrainian SSR Academy of Sciences and Candidate Member of USSR Academy of Sciences, Anton Vladimirovich Dumanskiy, born 22 June 1880 in Ivanovo-Voznesensk.

A. V. Dumanskiy began working on colloids while still a student in the Kiev Polytechnic Institute. In 1903, his first work on the properties of colloidal silver was published in the *Izvestiya Kiyevskogo politekhnicheskogo instituta* (News of Kiev Polytechnic Institute); ever since then A. V. Dumanskiy has been working on colloids. He is one of the founders of our native colloid science. Retained at the Kiev Polytechnic Institute, A. V. Dumanskiy set up there Russia's first colloid laboratory; in 1913 he began giving the first systematic course in this field.

From 1903 to 1907, A. V. Dumanskiy worked mainly on the stability of colloidal silver and iron hydroxide solutions, studying in detail the conditions of their coagulation induced by electrolytes, as well as the chemical reaction between colloidal particles and the simple ions of the electrolyte. Even at this early stage the author was dissatisfied with the primitive research methods prevailing at that time, and he started a broad introduction of physicochemical methods, believing that time had come to reject the view that colloids were some peculiar, vague systems and that it was impossible to study them using the physical chemistry methods.

A great merit of A. V. Dumanskiy consists in the use for the first time of colloidal foam as a semipermeable membrane, thus simplifying the study of colloidal systems. From this time, colloidal membranes have been universally used in dialysis, ultrafiltration of sols, as well as in osmotic determinations of colloidal solutions. Having developed this method, A. V. Dumanskiy was the first to study the dispersion of simple ions and molecules between the colloidal solution and the external liquid, separated from each other by a colloidal membrane. He was also the first to apply the precision method of electrical conductivity to study this dispersion. These studies established that the conductivity of a simple electrolyte increases when it causes a coagulation of the colloid; on the other hand, if the quantity of electrolyte added is clearly insufficient for coagulation to occur, its conductivity in the external liquid drops due to the adsorption of its ions by the colloidal particles. This type of adsorption phenomenon has been observed in urea solutions at concentration insufficient for the coagulation of the colloidal solution. This method later found a broad application in the works of the Soviet scientist A. I. Rabinovich and the Viennese scientist Pauli.

A. V. Dumanskiy took a big step forward at this time in the study of colloidal solutions using the centrifugal force to determine the dimensions of colloidal particles. In 1909 he published two works: "Effect of Centrifugal Force on the Equilibrium of a Chemical System" and "Effect of

Centrifugal Force on Certain Solutions". He had used in these researches a centrifugal force of 4,000 revolutions per minute, and had proposed a new, in principle, method for determining the dimensions of colloidal particles. These works were destined to play an exceedingly important role in our time. The Swedish scientist Svedberg, relying on A. V. Dumanskiy's works, worked out a method for determining the molecular weight of polymers using the ultracentrifuge; this method is now one of the most reliable and we may in full justification call it the Dumanskiy-Svedberg method.

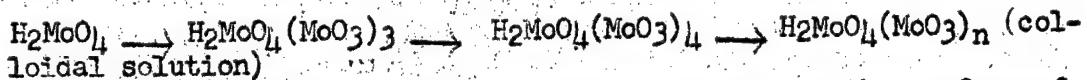
The above noted studies were generalized in his dissertation "On Colloidal Solutions" (Voronezh, 1914). This was the first dissertation on colloids in Russia.

In the ensuing years, A. V. Dumanskiy, as a professor, organized a big colloid laboratory in the Voronezh Agricultural Institute, which very soon became the center of domestic colloid science. In this laboratory Anton Vladimirovich carried on very important investigations into the viscosity of colloidal solutions, and was the first to advance the conclusion about the presence of a solvate membrane on the surface of colloidal particles. A year later these findings were confirmed by Hatschek and ten years later by Kruyt. Thus emerged a new trend in the study of colloid solvation, which has continued to the present day. So concludes the first fifteen years of work of A. V. Dumanskiy, during which he had published twenty four scientific works.

The Great October Socialist Revolution found A. V. Dumanskiy in full bloom of his creative power. As a progressive scientist wholly devoted to the people, A. V. Dumanskiy rose during the first days of the Revolution to the defense of its conquests, embarking on a vast scientific and organizational work. During the Soviet period of his activity Anton Vladimirovich showed himself as a progressive Soviet scientist, a first rate organizer of Soviet science, and a considerate and attentive educator of Soviet youth. Flourishing already during the initial years of Soviet power, the colloid laboratory of Voronezh Agricultural Institute attracted youths from the most diverse cities of the Soviet Union desiring to specialize in the field of colloids. Here one could meet young scientists from Moscow, Leningrad, Kiev, Khar'kov, Tashkent, Novocherkassk, Perm', and other cities. They all found here a very warm welcome and considerate relationships; they all left enriched with the experience of research work in the field of colloids. The propensity of the youth for science, which had found its outlet already during the first years of Soviet power, gained in strength in subsequent years and soon there was formed around A. V. Dumanskiy a sizable school of young scientists engaged in basic theoretical and important national economic problems.

Of the theoretical works of this period, note must be taken of a major series of work on the chemism of colloidal particles formation. The work on vanadium pentoxide sols, whose particles have the form of little rods, established the remarkable capacity of this sol, when diluted, for transition from the colloidal state to the true solution state of complex ions, and then to the ordinary ionic solution. This work showed that the chemical course of the formation of sols boils down to the appearance of

complex ions which grow progressively more complex and aggregate finally into colloidal particles. The formation of the (MoO_3) sol may be expressed thus:



which clearly shows that there is a stabilizer, H_2MoO_4 , on the surface of the colloidal particle $(\text{MoO}_3)_2$ thus formed. A. V. Dumanskiy confirmed this mechanism of colloidal solution formation by analyzing the electronegative sols of heavy metal hydroxides in an alkaline medium, in the presence of oxy acids which he obtained by a method developed in his laboratory. It should be observed that, in the light of these works, it was necessary to reexamine the widely disseminated theories of foreign scientists -- Pauli, Fajans, and others -- because of their oversimplification, while Fajans' theory required a reexamination also for the reason that its foundation rested on the idea of a crystalline structure of the colloidal nucleus, whereas in reality this nucleus is amorphous at the initial moment of its formation and only gradually does it turn into a crystalline nucleus. Mention must be made in this connection of another work of A. V. Dumanskiy dealing with the stability of colloidal solutions. Investigation of the arsenic trisulfide sol whose stability had been systematically measured for almost six years, showed the complete uniformity of this stability. Hence it was shown that also the fully stabilized hydrophobic colloids can be ranked with the fully thermodynamically stable systems. A. V. Dumanskiy's works in this period include also his monograph Metody opredeleniya dispersnosti zoley, emulsiy i suspenziy (Methods of Determining the Dispersion of Sols, Emulsions, and Suspensions) (1928) which supplied the theoretical foundations for all modern methods of determining the particle dimensions.

Characteristic of A. V. Dumanskiy as a scientist is the fact that in the course of his long years of work he has not shut himself up in purely theoretical research, but has constantly sought ways to apply his knowledge in the vigorously growing industry of the Soviet country. Thus, in conjunction with the problem of electrification of the country as raised by V. I. Lenin, the need arose for a widespread use of various local sources of fuel. For Moscow and its environs this type of fuel was peat. Because the peat-extraction practice at this time included washing its deposits by water jets, it was necessary to find a rather fast and effective method of ridding the peat thus extracted of its excess water. A. V. Dumanskiy undertook the solution of this problem and in 1921/1922, on the basis of his works, Gidrotorf (Upravleniye po dobyche torfa gidravlicheskim sposobom -- Administration for Peat Extraction by Hydraulic Methods) introduced an effective method of peat dehydration. Results of these works were described in an article entitled "Colloidal Properties of Peat" (1926). Among the various methods of peat dehydration in use throughout the world, the so-called "Russian method" has proved itself as the best.

By 1932 the colloid laboratory of the Voronezh Agricultural Institute had expanded and consolidated its ties with the industry to such an extent that it could no longer meet either the requirements of the vigorously growing science or the needs of new industry. All this led to a

significant expansion in the volume of work carried on under the direction of A. V. Dumanskiy. In 1932, by a decree of the Soviet government, Voronezh saw the organization of world's first Institute of Colloid Chemistry, headed by A. V. Dumanskiy. This institute has played an exceptional part in the progress of colloid science in USSR. Fundamental tasks of the institute were: to develop new methods of physicochemical analysis of colloidal systems; to investigate the mechanism of water binding by the colloidal particles. At this time the Institute of Colloid Chemistry made an extensive use of N. S. Kurnakov's triangular diagram method which has had a very favorable effect on the progress of various branches of colloid chemistry because it made possible, on the one hand, a new approach to the study of such complex phenomena as coagulation, peptization and fractionation, and, on the other hand, the detection and correction of several errors in the works of other researchers who had used less accurate methods. For his work in this field A. V. Dumanskiy was awarded in 1932 the Large Mendeleyev Prize.

The broadly arranged investigations into the colloid-bound water have resulted in findings of major theoretical significance, as well as in development and wide application in industry of simple and convenient methods of bound water determinations. A. V. Dumanskiy has performed a great service by demonstrating the part played by fixed water in technological processes of the food industry. It is enough to point out that the methods worked out by A. V. Dumanskiy made possible the examination and elimination of errors in such industries as sugar, fermenting industry, starch-molasses, baking, and other. A. V. Dumanskiy showed also the enormous significance of bound water in drought - and frost-resistance of plants.

The Colloid Institute, growing from its base as the colloid laboratory of Voronezh Agricultural Institute, became very quickly the center of colloid science in USSR, exerting a major scientific and organizational influence on the advancement of this field of knowledge. A. V. Dumanskiy has revealed his first-rate organizing abilities when it comes to convening conferences on colloids. The first very limited conference was organized in 1929. It was attended by A. V. Dumanskiy plus the following Moscow scientists: S. A. Voznesenskiy, B.A. Dogadkin, S. M. Lipatov, and P. A. Rebinder. A. V. Dumanskiy addressed the conference, giving an account of the work then in progress in his laboratory and stressing the vigorous growth of colloid science in our country. He indicated the advisability of organizing not only a special institute but a special journal as well, which would unite all Soviet scientists working on colloids. In 1934 the first All-Union Conference on Colloids was convened in Voronezh at the Colloid Institute. The conference brought together a large number of participants and vividly demonstrated the unprecedented growth of this field of knowledge in USSR. Before this conference a large number of Soviet researchers in the field of colloids worked in isolation from one another; there was no exchange of research results, while papers were published in various Soviet journals as well as in foreign journals.

Taking all this into account, A. V. Dumanskiy embarked on the founding of *Kolloidnyy zhurnal* (Colloid Journal). For a long time A. V. Dumanskiy

alone, as editor-in-chief, performed the basic work of reviewing and editing the articles submitted for publication. In the initial years of its existence, A. V. Dumanskiy held the view that his principal job as editor was to devote maximum attention to the young workers along the periphery who frequently lacked leadership and felt uncertainty in their first experiments. This attention helped materially to draw the youth into sharing in the progress of the journal and of colloid science.

It has already been noted that A. V. Dumanskiy devoted much effort in the Colloid Institute to investigations into the mechanism of the binding of various liquids by colloids. This was a new phase in the work of the scientist who till then had dealt with lyophobic colloids. The new trend did not come about accidentally. By 1930 both science and practice were faced with new tasks generated by the advancement of new branches of industry: synthetic fibers, plastics, synthetic rubber. With latitude inherent in him, A. V. Dumanskiy set about to investigate the formation of synthetic polymers and their lyophilic character. In 1932, at the request of Academician S. V. Lebedev, Anton Vladimirovich found a catalyst for the polymerization of divinyl. This work was connected with the attempt to clarify the mechanism of the polymerization process.

A. V. Dumanskiy showed that the contemporary theory of coagulation kinetics could be wholly applied to study also the polymerization process. However, the basic course pursued at this time by A. V. Dumanskiy and his school was the systematic investigation into the lyophilic nature of polymers. Having examined critically the status of this matter, A. V. Dumanskiy showed in 1936 that the colloidal particle, or the polymer macromolecule, can bind a certain volume of the liquid and that the diffuse solvate layer can be broken up not only by temperature but also by introducing an alien soluble substance into the solution; the greater the concentration of these substances in the solution the more energetic is their breakdown of the diffuse layers. Since the liquid bound by the particles is not a solvent for the alien soluble substances (indicators) introduced into the system, therefore the change occurring in the concentration of the indicator serves to determine the volume of liquid bound by colloidal particles. Moreover, by changing the concentration of the indicator a determination can be made of the depth of the diffuse solvate layer (at small concentrations of the indicator) and of stably bound liquid (at large concentrations of the indicator).

The refractometric method of bound liquid determination, as worked out by A. V. Dumanskiy, has found a broad application as a rapid and an accurate method for controlling the various production processes. A. V. Dumanskiy, described the results of his researches in a monograph entitled *Liofil'nost' dispersnykh sistem* (Lyophilic Property of Disperse Systems) (1940) in which he supplied a critical survey of the existing methods of determining the solvation degree, a critical evaluation of various views on this phenomenon, and an analysis of industrial significance of this problem. This monograph has retained its value down to the present, being the sole monograph on this problem in world's literature.

During the Great Patriotic War, A. V. Dumanskiy, as a true patriot of his Motherland, worked on defense matters. He organized the manufacture of anti-mustard gas fabric, using the byproducts of local industry, as well

as the manufacture of activated charcoal. He worked out a new method of cleaning the pistons of internal combustion engines from carbon deposits. After the Great Patriotic War A. V. Dumanskiy went to Moscow, where he organized a colloid laboratory in the Ministry of Food Industry, and the Colloid Committee in VNITO (Vsesoyuznoye nauchnoye izzhenerno-tehnicheskoye obshchestvo -- All-Union Scientific, Engineering and Technical Society) of the Food Industry. At this time, too, he organized and headed the Colloid Section of the All-Union Chemical Society imeni D. I. Mendeleyev. In 1945, on the initiative of A. V. Dumanskiy, a conference on the use of colloids in food industry was convened; its proceedings were published in two symposia entitled *Kolloidy v protsessakh pishchevoy industrii* (Colloids in Food Industry Processes). Meanwhile, Anton Vladimirovich resumed the publication of *Colloid Journal*. Also in 1945, A. V. Dumanskiy was elected a Regular Member of the Academy of Sciences Ukrainian SSR, moved to Kiev, was appointed Director of the Institute of General and Inorganic Chemistry, and assumed the editorship of *Ukrainskiy khimicheskiy zhurnal* (Ukrainian Chemical Journal). From that year on he has been active in a series of important problems dealing with polymers, drawing on new physicochemical research methods. Of the researches performed during this period, first mention must be made of the detailed investigations into the thermochemical aspects of the solvation process. Proceeding on the assumption that water molecules are combined, A. V. Dumanskiy gives the following thermochemical equation for the hydration of starch and other water-insoluble polymers:

$$\Sigma Q = Q_1 + Q_2 + Q_{ads} + q_k$$

where ΣQ is the total heat determined by calorimeter, Q_1 is the heat of dissociation of $(H_2O)_1$ into simple molecules, Q_{ads} is the heat of adsorption of simple water molecules by the polymer, Q_2 is the heat of association of the remaining simple water molecules, and q_k is the change in kinetic energy of simple water molecules produced by their orientation on the polymer surface. Since the water molecules association and the hydration processes are accomplished by hydrogen bonding, it may therefore be assumed that their number does not change either before or after hydration, hence

$$Q_1 + Q_2 + Q_{ads} = 0 \text{ and } \Sigma Q = q_k$$

It follows from this that the heat of hydration for all insoluble polymers in which hydration is attributed to the hydrogen bond will be constant and equal to the variation in the kinetic energy of simple water molecules when they are bound by the polymer surface. It was determined experimentally that ΣQ equals 1,328 cal/moles of water or 10^{-13} ergs per molecule. These results are defined by the term $5/2 RT = 1,450$ cal/moles. Since the value of ΣQ is calculated on 1 g of solid polymer, it follows from A. V. Dumanskiy's rule that, by determining the ΣQ only, it is possible to calculate the threshold volume of the liquid bound by the polymer. Verification of the Dumanskiy rule on several polymers has resulted in a good coincidence of calculations with those obtained by measurements.

The second group of works conducted by A. V. Dumanskiy deals with the very important though little studied problem of dielectric properties of polymers in solutions. This method was applied, on the one hand, to

determine the degree of polymer hydration and, on the other, to study their structure. A. V. Dumanskiy evolved the following formula to calculate the hydration:

$$n = \frac{(c_1 - c_2 p_c)^d}{(p_b - p_c) k}$$

where n is the volume of water bound by one gram of polymer, p_b is the potential polarization of bound water, p_c is the specific polarization of free water, d is the free water density, G_k is the weight of the disperse phase in 100 g of solution. The author has shown that 1 g of albumin binds 0.42 g of water, with the density of bound water at 1.7. The author views the denaturing of albumin as a phenomenon associated with the reduced volume of bound water (down to 0.26) as well as its density.

It is assumed, moreover, that in denaturing the density of the albumin itself increases from 1.24 to 1.34. Measurement of dipole moments leads to the conclusion that denaturing causes a decrease in the dipole moment. These recent investigations mark a new course in A. V. Dumanskiy's work, which will doubtless produce very material results.

We must not overlook also A. V. Dumanskiy's teaching work which has run its course in various higher educational establishments of the Soviet Union for a number of years. The considerable teaching experience of A. V. Dumanskiy found its reflection in the books: Dispersnost' i kolloidnoye sostoyaniye veshchestva (Dispersion and Colloidal State of Matter) (published in 1932) and Ucheniye o kolloidakh (The Science of Colloids) published in 1935, 1937, and 1948. These two books contain the results of work of A.V. Dumanskiy himself and his school, as well as of other Soviet scientists; the learning youth thus has the opportunity to draw a clear picture of the achievements of colloid science in USSR.

A. V. Dumanskiy is also a prominent public and political worker. In 1919-1920 he took an active part in the activities of Gubsovmarkhcz (Gubernskiy sovet narodnogo khozyaystva -- Guberniya Council of the National Economy), in the rehabilitation of industry in Voronezh Guberniya. In 1935 he was elected a member of the Voronezh City Soviet, and in 1937, a member of the Voronezhskaya Oblast' Executive Committee; in 1939 he was elected a deputy to the Voronezhskaya Oblast' Soviet. For scientific and organizational work during the Great Patriotic War the Supreme Soviet Kazakh SSR awarded him, in 1942, the honorary title of Honored Worker of Science. In November 1944, A. V. Dumanskiy was awarded the Order of Lenin, and in 1945, Order of Labor of the Red Banner. A. V. Dumanskiy has been a member of the Communist Party of the Soviet Union since April 1940.

It is impossible in a brief article to depict in any adequate measure the varied activities of A. V. Dumanskiy. Indeed, our sketch does not pretend to do so. We have tried merely to show that in A. V. Dumanskiy we have a leading Soviet scientist, an indefatigable organizer of Soviet science, and an excellent teacher of Soviet youth.

A. V. Dumanskiy's scientific works have been firmly implanted into modern colloid science, while his work may serve as an example of selfless service to our grand Motherland.

Editorial Staff